



Ministry of  
Environment and  
Climate Change Strategy

# Moving from WELLS to GWELLS

BC Ground Water Association Convention

April 4, 2018

Presented by

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Water Protection and Sustainability Branch



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# Why a New Application?

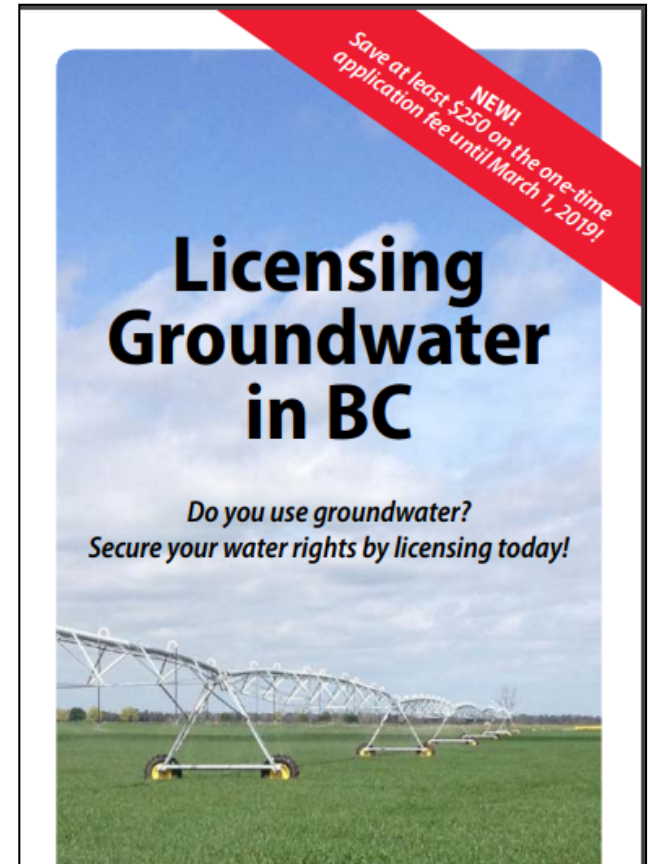
To support:

- Access to groundwater data
- *Water Sustainability Act*
- Groundwater Protection Regulation
- Decision making related to the groundwater resource



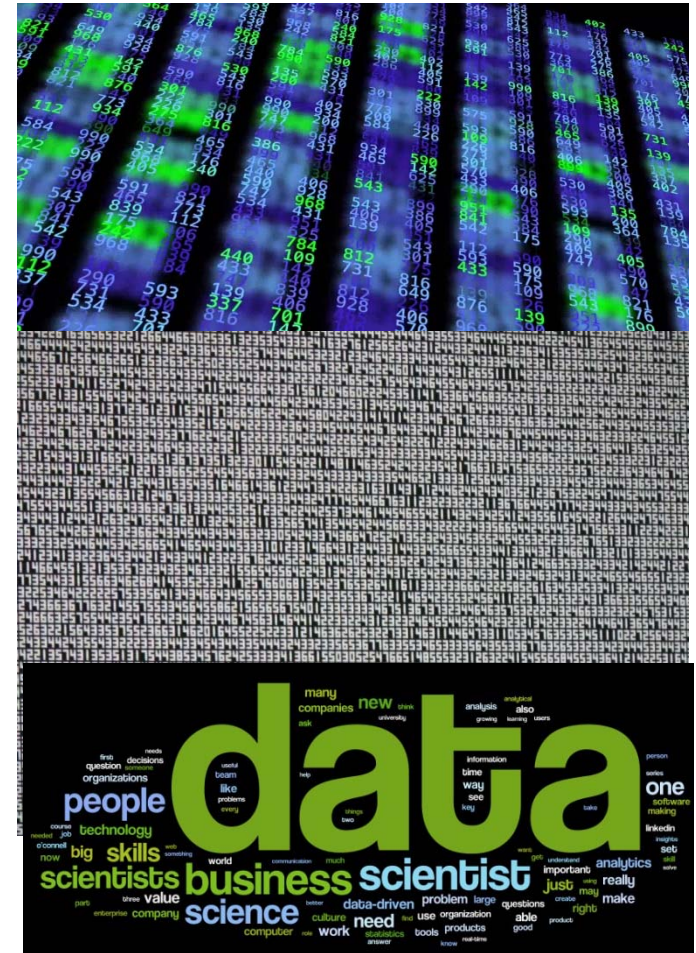
# Secure Your Groundwater Rights!

- Existing use - Submit an online application by **March 1, 2019** to have historic use recognized
- New use (after Feb 29, 2016) – submit before diverting groundwater



# Project Goals

- Streamline how data is submitted
- Improve how data and information is accessed
- Improve data quality



# Our Design Principles

1. Think like a start-up: Be bold! Fail early! Be agile!
2. Maximize collaboration
3. Strive for simplicity
4. Working software is our measure of progress





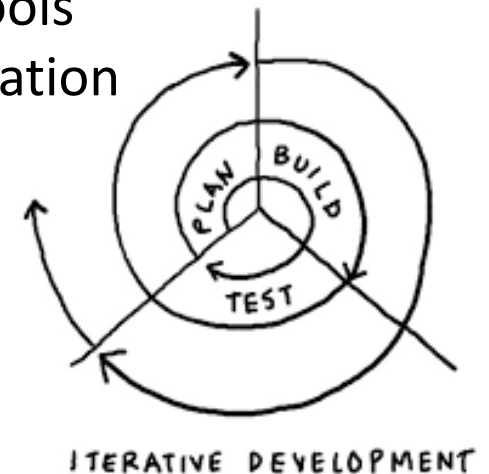
# How is GWELLS Being Developed?

## Agile Approach

An iterative approach to planning and guiding project processes.

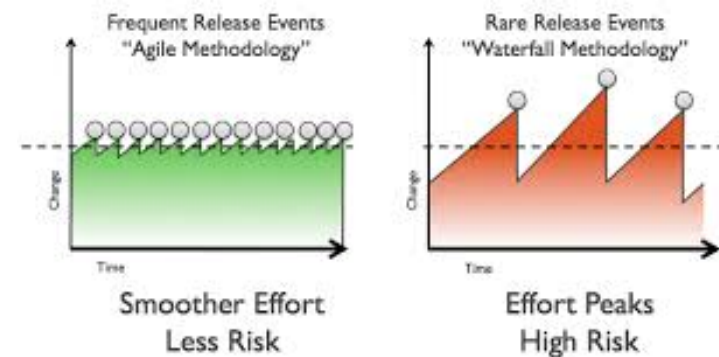
### Key Values:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration
- Responding to change over following a plan




# Benefits of Agile

- Quick delivery of product and enables value to be realized incrementally
- Provides greater visibility through short release cycles and frequent demos
- Improves quality
- Focus on user engagement



# What Have We Done?

## Simple Search

**Groundwater Wells and Aquifers**

Search | Groundwater Information | Registry

### Groundwater Well Search

Not all groundwater wells are registered with the province, as registration was voluntary until February 29, 2016. Data quality issues may impact search results.

Search by one of the fields below, or zoom to a location on the map and select the "Search Wells in this Area" button.

Well Tag Number or Well Identification Plate Number ⓘ

Street Address ⓘ


Legal Plan or District Lot or Parcel Identification Number (PID) ⓘ

Owner Name ⓘ

SearchReset

For additional search options, try:

- [B.C. Water Resource Atlas](#)
- [iMapBC](#)



Leaflet | Powered by Esri

Show 10 entries

Well Tag Number ⓘ	Well ID Plate Number ⓘ	Owner Name ⓘ	Street Address ⓘ	Lot ⓘ	Plan ⓘ	District Lot ⓘ	Land District ⓘ	PID ⓘ	Diameter (inches) ⓘ	Finished Well Depth (feet) ⓘ
<a href="#">41480</a>		DORRINGTON	SHAWNIGAN MILL BAY RD	1	35782				6.0	165.00
<a href="#">108895</a>	41480	FRED JOHNSON	235 DRIFTWOOD ROAD QUALICUM BEACH	1	16060	81				309.00


Showing 1 to 2 of 2 entries

Previous1Next



# What Have We Done?


## Well Summary page

 **Groundwater Wells and Aquifers**

Search | Groundwater Information | Registry

Please take a moment to complete a [short survey](#) to let us know about your well summary page experience.

### Well Summary



Well Tag Number: 108895  
Well Identification Plate Number: 41480  
Owner Name: FRED JOHNSON  
Licenced Status: UNLICENSED

Well Status: ALTERATION  
Well Class: Water Supply  
Well Subclass: Domestic  
Intended Water Use: Private Domestic

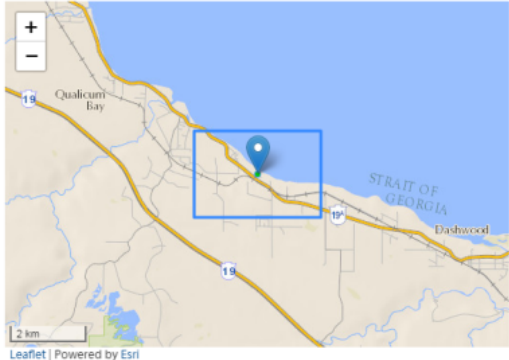
Observation Well Number:  
Observation Well Status:  
Environmental Monitoring System (EMS) ID:  
Aquifer Number:  
Alternative specs submitted (if required): No

### Location Information

Street Address: 235 DRIFTWOOD ROAD  
Town/City: QUALICUM BEACH  
Legal Description:

Lot	1
Plan	16060
District Lot	81
Block	
Section	
Township	
Range	
Land District	35 NEWCASTLE
Property Identification Description (PID)	001485431

Description of Well Location: Within property boundaries.  
BCGS Mapsheet Number: 092F038331



Leaflet | Powered by Esri

Geographic Coordinates - North American Datum of 1983 (NAD 83)

# What Have We Done?

## Access to historical well records

**BRITISH COLUMBIA** Groundwater Wells and Aquifers

Search | Groundwater Information | Registry

Please take a moment to complete a short survey to let us know about your well summary page experience.

### Well Summary

Well Tag Number: 108895  
Well Identification Plate Number: 41480  
Owner Name: FRED JOHNSON  
Licenced Status: UNLICENSED

Well Status: ALTERATION  
Well Class: Water Supply  
Well Subclass: Domestic  
Intended Water Use: Private Domestic

Observation Well Number:  
Observation Well Status:  
Environmental Monitoring System (EMS) ID:  
Aquifer Number:  
Alternative specs submitted (if required): No

### Location Information

Street Address: 235 DRIFTWOOD ROAD  
Town/City: QUALICUM BEACH  
Legal Description:

Lot	1
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Geographic Coordinates - North American Datum of 1983 (NAD 83)

### Additional Documentation

#### Document Link

[WTN 108895 \\_Well Alteration.pdf](#)

[WTN 108895 \\_Well Construction.pdf](#)

**BRITISH COLUMBIA** Ministry of Environment

☒ Well Construction Report  
☐ Well Closure Report  
☐ Well Alteration Report

Ministry Well ID Plate Number: 41480  
Ministry Well Tag Number: 108895  
☐ Confirmation/alternative specs. attached  
☐ Original well construction report attached

Red lettering indicates minimum mandatory information. See reverse for notes & definitions of abbreviations.

Owner name: FRED JOHNSON  
Mailing address: 235 DRIFTWOOD ROAD Town: QUALICUM BEACH Prov: B.C. Postal Code: V9K 1Z1  
Well Location (see note 2): Address: Street no. 235 Street name: Driftwood Road Town: Qualicum Beach  
Legal description: Lot 1 Plan 16060 D.L. 81 Block Sec. Twp. Rg. Land District 35  
PID: 001485431 and Description of well location (attach sketch, if nec.): Within Township Boundaries

NAD 83 Zone: 10 UTM Easting: 395308 m Latitude (see note 4):  
(see note 3) and UTM Northing: 5471062 m Longitude:  
Method of drilling: ☐ air rotary ☐ dual rotary ☐ cable tool ☐ mud rotary ☐ auger ☐ driving ☐ jetting ☐ other (specify):  
Orientation of well: ☐ vertical ☐ horizontal Ground elevation: 188 ft (asl) Method (see note 5): 5/8" HANDBREW #1-23'  
Class of well (see note 6): Water Supply Sub-class of well: Domestic  
Water supply wells: indicate intended water use: ☐ private domestic ☐ water supply system ☐ irrigation ☐ commercial or industrial ☐ other (specify):

Lithologic description (see notes 8-13): description (see notes 14 and 15)


Material	Colour	Hardness	Water Content	Observations (e.g. other geological materials (e.g. boulders), est. water bearing flow (USgpm), or closure details)
Soil	Dark			Soil: Dark
Fill				Fill
Fill				Fill: Tight
Fill				Fill: Tight
Medium Grains				Medium Grains
Soil				Soil
Medium Grains				Medium Grains
Silt				Silt

Screen details

From ft (bgl)	To ft (bgl)	Dia in	Casing Material/Open Hole (see note 17)	Wall Thickness in	Drive Shoe	From ft (bgl)	To ft (bgl)	Dia in	Type (see note 18)	Slot Size
0	175.6		Steel	0.194						

# Coming Soon

## Well Driller and Well Pump Installer registry search page



### REGISTER OF WELL DRILLERS

in the Province of British Columbia

Pursuant to Part 2, Section 7 of the *Groundwater Protection Regulation*, the Comptroller must establish and maintain a register of well drillers who are authorized to operate in British Columbia. The list of well drillers whose names are in the Register, must be made available to the public during normal business hours, or be posted on a publicly available website.

Pursuant to Section 14 of the *Groundwater Protection Regulation*, a registered well driller who is classified as a water well driller is qualified in respect of constructing any other than closed-loop geosynthetic wells; a registered well driller who is classified as a geosynthetic driller is qualified in respect of constructing closed loop geosynthetic wells; a registered well driller who is classified as a geotechnical/environmental driller is qualified in respect of constructing monitoring wells, geotechnical wells and remediation wells.


Pursuant to Section 14 of the *Groundwater Protection Regulation*, a registered well driller is qualified in respect of decommissioning or deactivating any class of well.

Pursuant to Section 14 of the *Groundwater Protection Regulation*, in relation to water supply wells, dewatering wells, injection wells and remediation wells, a registered well driller is qualified in respect of installing, maintaining, repairing, removing or testing a well pump or a well head in; qualified in respect of conducting a flow test of a well, qualified in respect of disinfecting a well pump, qualified in respect of disinfecting a well.

#### Well Drillers - Cariboo Region

Name and Registration No.	Company Contact Information	Class of Driller	Qualified To Drill	Certificate
Abercrombie, Dennis	Abercrombie Drilling 2405 Bush Road Williams Lake BC V2G 4V9 email: (250) 398-5315	Water Well, Geosynthetic, Geotechnical / Environmental	All classes of wells	n/a
WD 05052906				
Abercrombie, Donald	Donald Abercrombie Well Drilling Box 152 150 Mile House BC V0K 2G0 email: (250) 296-4463	Water Well, Geosynthetic, Geotechnical / Environmental	All classes of wells	n/a
WD 06101802				

Register updated: 2018-01-23



### Groundwater Wells and Aquifers

- Search
- Groundwater Information
- Registry
- Submit Report
- Admin

#### Register of Well Drillers and Well Pump Installers

[Learn more about registering as a well driller or well pump installer in B.C.](#)

Log in

#### Search for a Well Driller or Well Installer

Choose professional type:  
☒ Well Driller ☐ Pump Installer

Community  
All

Individual, company, or registration number  
Search

Entries  
10

Submit Reset

#### Well Driller Results

Name	Company Name	Company Address	Contact Information	Qualified to Drill	Certificate Issued By
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# User Engagement

- 100+ user engagement sessions
- Internal and external users
- Feedback is:
  - Confidential
  - Anonymized



# Feedback

***“The upgrades you have made this year have made my life easier”*** – Driller (search)

***“This is wicked”*** – Driller (search)

***“It makes searching for a well so easy!”*** – GW Hydrogeologist (search)



***“Loved the map feature”*** – Well owner (search)

***“In one word ‘Brilliant’”*** – Senior Authorizations staff (document storage)

# What Happens to Your Feedback?

- Documented for consideration and prioritization

The image shows a Jira ticket on the left and a web application on the right. The Jira ticket, titled 'EPIC#WellSummary | Print button [1] !!!! [gherkin]', contains a user story, acceptance criteria, and attachments. A blue arrow points from the 'printbutton.jpg' attachment to a text box. The text box contains the following feedback:

Feedback related to print:

- Feedback from Authorization user has indicated that having an easy print/save to PDF button would be most efficient/beneficial when looking at multiple well reports or needing to save well reports to e-licencing file.
- From Well Summary Survey - biggest pinch point for users was not knowing how to print or save a record.

The web application, 'Groundwater Wells and Aquifers', shows a 'Well Summary' page for a well with tag number 100254. It includes fields for Well Status, Well Class, Well Subclass, Intended Water Use, Observation Well Number, Observation Well Status, Environmental Monitoring System (EMS) ID, Aquifer Number, and Alternative specs submitted. A map of the well location is shown at the bottom right. A blue arrow points from the feedback text box to the map area.



# Demonstration

GWELLS



# Where We Are Going

- Register of Well Drillers and Well Pump Installers
- Submission of Well Records
- Edit-ability of Well Records
- Aquifer Data and Information
- Integration with other groundwater related applications



# Keys to Success

- User engagement
- Industry support



# We Want to Hear from You!

- Executive boardroom
- Wednesday April 4, 1:00pm – 4:00pm
- Thursday April 5, 9:00am – 3:00pm





If you have any questions please contact:

Lindsay Macfarlane:

[Lindsay.Macfarlane@gov.bc.ca](mailto:Lindsay.Macfarlane@gov.bc.ca)